

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. – 20. (Canceled)

21. (Original) A method of forming a non-linear tunnel through a bone structure, comprising:

positioning a single shaft cutting tool adjacent to the bone structure at a first location; and

cutting a non-linear path through the bone structure so as to cause the single shaft cutting tool to exit the bone structure at a second bone location.

22. (Original) The method of Claim 21 further comprising forming the non-linear path in the bone substantially percutaneously.

23. (Original) The method of Claim 21 wherein the first location and second location are co-planar.

24. (Original) The method of Claim 21 further comprising:
pulling a suture through the non-linear path to secure a suture to a selected tissue near to the first and second bone location;

25. (Original) The method of Claim 21 further comprising:
directing the single shaft cutting tool in the non-linear path with a strand.

26. (Original) The method of Claim 21 further comprising:
directing the single shaft cutting tool in the non-linear path with a rod formed of a memory-shape alloy.

27. (Original) The method of Claim 21 further comprising:
viewing the cutting of the non-linear path with an arthroscope.

28. (New) A method of forming a non-linear tunnel through a bone structure, comprising:

interconnecting a flexible drill shaft and a drill head;

forming a small incision in a tissue near the bone structure;

passing the drill head with the flexible drill shaft percutaneously through the small incision;

drilling into the bone structure with the drill head;

guiding the drill head with the flexible drill shaft with a guide mechanism along a selected non-linear cutting path; and

forming the selected non-linear cutting path between an entering position and an exiting position spaced a distance from the entering position in the bone structure.

29. (New) The method of Claim 28 further comprising:

providing a suture near the exiting position;

moving the drill head and the flexible drill shaft;

engaging the suture with a suture mechanism near the drill head; and

pulling the suture from the exiting position to the entering position with the suture mechanism.

30. (New) The method of Claim 28 wherein the guide mechanism further includes:

a flexible rod at least partially enclosing at least a portion of the flexible drill shaft and having a proximal end and a distal end, the flexible drill shaft coupled to the flexible rod at the proximal end; and

a flexible member interconnected with a distal end of the flexible drill shaft.

31. (New) The method of Claim 28, wherein guiding the drill head includes:
positioning at least a portion of the flexible drill shaft through a flexible rod;
connecting a flexible member to a portion of the flexible drill shaft; and
sliding a handle to tension the flexible member to assist in directing the flexible drill shaft along the selected non-linear path.

32. (New) The method of Claim 31, further comprising:
selecting a first path that is linear or non-linear of the drill head;
selecting a second path that is linear or non-linear of the drill head;
wherein sliding a handle to tension the flexible member moves the flexible member to engage the drill head or the flexible drill shaft to move the drill head from the selected first path to the selected second path during forming the selected non-linear cutting path.

33. (New) The method of Claim 28, wherein guiding the drill head includes: passing at least one of the flexible drill shaft, the drill head, or combinations thereof through a flexible rod, moving the flexible rod to engage and direct at least one of the flexible drill shaft, the drill head, or combinations thereof;

wherein forming the selected non-linear cutting path includes directing at least one of the flexible drill shaft, the drill head, or combinations along a first path and directing at least one of the flexible drill shaft, the drill head, or combinations along a second path.

34. (New) The method of Claim 33 wherein forming the selected non-linear path includes forming the first path linearly and the second path non-linearly while forming the selected non-linear cutting path.

35. (New) The method of Claim 30 wherein the flexible rod is made from a shape memory alloy.

36. (New) The method of Claim 28, wherein forming the small incision near the bone structure includes forming the small incision near a humeral head of a humerus.

37. (New) The method of Claim 36, further comprising:
- engaging a select tissue with the suture;
 - moving a suture through the tunnel formed in the humerus;
 - tying the suture to the humerus; and
 - compressing a tissue to the humerus.
38. (New) The method of Claim 37, further comprising:
- associating a suture engaging hook with the drill head; and
 - engaging the suture with the suture engaging hook.

39. (New) A method of forming a non-linear tunnel through a bone structure, comprising:

identifying the bone structure as at least one of a humerus, humeral head, glenoid, or combinations thereof;

forming an incision in tissue relative to the identified bone structure;

drilling into the identified bone structure with a drill head associated with a flexible drill shaft;

guiding the drill head with a guide mechanism through an entry position and through the identified bone structure in a first direction;

forming a tunnel with the drill head along a first path and a second path;

exiting the identified bone structure at an exit position with the drill head;

moving a suture engaging member near the drill head through the formed tunnel;

pulling a suture through the formed tunnel in a second direction to pull the suture from the exit position to the entry position; and

engaging the identified bone structure with the suture.

41. (New) The method of Claim 39, further comprising:

passing the suture through a soft-tissue near the humeral head; and

compressing the soft-tissue to the identified bone structure with the suture.

42. (New) The method of Claim 39, further comprising:
positioning an arthroscope near at least one of the entry position, the exit position, or combinations thereof.

43. (New) The method of Claim 39, wherein guiding the drill head with a guide mechanism includes:

engaging a flexible rod with a housing, wherein the flexible rod has a proximal end and a distal end and the flexible drill shaft is coupled to the flexible rod at the proximal end; and

engaging a handle having a proximal end and a distal end with the distal end of the flexible rod and the housing.

44. (New) The method of Claim 43, further comprising:
interconnecting a flexible member to the flexible drill shaft; and
sliding the handle to cause tension in the flexible member to direct the flexible drill shaft along the selected curved path while forming the tunnel;
wherein guiding the drill head includes changing a direction of the drill head after beginning forming the tunnel.

45. (New) The method of Claim 43, further comprising:
coupling a flexible member to the flexible drill shaft;
extending the flexible member through the housing; and
manipulating the flexible member manually to direct the flexible drill shaft
along the selected curved path.

46. (New) The method of Claim 39, wherein the entry position is near at least
one of a lateral side of the humerus, a superior side of the humeral head, or
combinations thereof; and
the exit position is at least one of the other of the lateral side of the
humerus, the superior side of the humeral head, or combinations thereof.

47. (New) The method of Claim 46, further comprising:
passing the suture through a soft-tissue near the humeral head; and
compressing the soft-tissue to the superior side of the humeral head with
the suture.